B. AMENDMENTS TO THE SPECIFICATION

Please replace paragraph the paragraph beginning on page 4, line 2, with the following amended paragraph:

A1

The present invention is directed to a biocompatible radiation shield for use with a radiation applicator system, which is mountable to a radiation source in order to apply a predefined dose of radiation to an area or volume. The radiation applicator system includes an applicator and adapter. The adapter couples the applicator to a radiation source. The applicator includes an applicator shank and an applicator head. The adapter engages the applicator shank at the shank's ~~proximate~~ proximal end and thereby allows coupling of the applicator to the radiation source, when the adapter is coupled to the radiation source. At the opposite and distal end of the applicator shank is the applicator head, which is used for applying a predefined dose of radiation across a surface contour to treat a predefined volume of tissue surrounding a surgical site. Preferably, the applicator head and surface contour coincide such that the surface of the applicator head engages and/or supports the area or volume to be treated and applies a uniform dose of radiation over the area or volume to be treated.

Please replace paragraph the paragraph beginning on page 7, line 2, with the following amended paragraph:

A2

Figure 1A shows an applicator system 10 and a biocompatible radiation shield 60 for applying a dose of radiation to an area to treat a volume of tissue. The applicator system 10 includes an applicator 12 and an adapter 20. Applicator 12 includes a shank 38 and a head 30, wherein head 30 is located at a distal end of shank 38. A ~~proximate~~ proximal end of shank 38 removably engages with adapter 20 to form applicator system 10. Wherein adapter 20 is structured for attaching applicator system 10 to a radiation source (not shown). At the opposite and distal end of applicator shank 38, applicator head 30 is adapted for engaging and conforming a tissue cavity to a desired shape in order to permit the area or volume adjacent the tissue cavity to be treated with a predefined dose of radiation.

Please replace paragraph the paragraph beginning on page 7, line 22, with the following amended paragraph:

A3

In the embodiment shown, adapter 20 of the applicator system 10, which is supported by a carrier system arm 15, includes a circumferential groove 46 and a retaining spring 24 (or O-ring) mounted in groove 46. A portion of spring 24 extends above the surface of the adapter 44 to facilitate engagement of applicator 12 to adapter 20. The ~~proximate~~ proximal end of the applicator shank 38 is adapted to fit over adapter 20 and includes an interior, circumferential groove 22 which is adapted to receive the portion of the spring 24 that extends above the adapter groove 46.

Please replace paragraph the paragraph beginning on page 8, line 14, with the following amended paragraph:

A4

A ~~proximate~~ proximal end of the applicator head 30 is adapted to receive probe 48. As shown in Figure 3, the applicator shank 38 includes an applicator barrel 32 which supports applicator head 30. In one form, applicator head 30 is integral with shank 38, and in other forms applicator head 30 is removable such that any of a number of heads can be used with a given shank. The applicator 12 may further include a low energy radiation filter 34 that is formed from a material that absorbs or blocks low energy radiation produced by the probe 48 in order to prevent adverse effects on tissue adjacent the applicator head 30. The shape of the low energy filter 34 is determined by the output profile of the radiation source in the radiation probe 48. Preferably, the shape of the low energy filter 34 is selected to reduce the low energy radiation produced outside the applicator head 30 to an acceptable level for the required treatment. For applicator systems with large applicator heads, a low energy filter may not be required because the applicator head may be sufficiently sized to attenuate the low energy radiation.